A2 CONT'D SUBST Cont

36. (New) The imaging device of Claim 1, wherein the second module implements computations in response to exposure data transmitted from the first module and image data transmitted from the memory component.

37. (New) An imaging device for capturing optical image data: the device comprising:

an imager for generating an image signal;

a memory component that receives the image signal from the imager and stores the image signal is image data; and

a multi-tasking operating system that implements a multi-tasked exposure control routine.

38. (New) The imaging device of Claim 37, wherein the multi-tasked exposure control routine further comprises a first module that controls the exposure and gain setting in the imager and a second module that implements computations in response to exposure data transmitted from the first module to determine a targeted exposure and gain setting.

39. (New) The imaging device of Claim 38, wherein the second module implements computations in response to exposure data transmitted from the first module and image data transmitted from the memory component.

40. (New) The imaging device of Claim 37, wherein the multi-tasking operating system is controlled by a processor within the imaging device that executes all of the imaging device multi-tasking applications.

41. (New) The imaging device of Claim 37, wherein the first module is implemented in a high priority thread.

A2 CONCL.

42. (New) The imaging device of Claim 37, wherein the first module is implemented in a high priority task.

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43. (New) The imaging device of Claim 37, wherein the first module is implemented in an interrupt service routine.

44. (New) The imaging device of Claim 37, wherein the second module is implemented in a low priority thread routine.

45. (New) The imaging device of Claim 37, wherein the second module is implemented in a low priority task routine.

46. (New) The imaging device of Claim 37, wherein the second module includes histogram processing.

47. (New) The imaging device of Claim 37, wherein the first module is implemented in a an interrupt service routine and the second module is implemented in a low priority task routine.

48. (New) An imaging device for capturing optical image data, the device comprising:

an imager for generating an image signal;

a memory component that receives the image signal from the imager and stores the image signal as image data; and

a multi-tasking operating system that allows for the simultaneous execution of a high priority module for real time control of the imager and a lower priority module that examines the image signal and provides feedback to the high priority module routine.